

MATERIAL SAFETY DATA SHEET
EASTMAN KODAK COMPANYNONE
KKK

DATE OF REVISION: 04/12/90

KODAK ACCESSION NUMBER: 427909

PRODUCT INFORMATION

PRODUCT NAME: KODAK HC-110 DEVELOPER

FORMULA: AQUEOUS MIXTURE

KODAK CATALOG NUMBER(S): CAT 140 8962 - TO MAKE 3 1/2 GALLONS; CAT 140 8988 - TO MAKE 2 GALLONS

SOLUTION NUMBER: 4987

KODAK HAZARD RATING CODES: R: 1 S: 2 F: 1 C: 0

MANUFACTURER/SUPPLIER:

EASTMAN KODAK COMPANY

343 STATE STREET

ROCHESTER, NEW YORK 14650

USA

FOR EMERGENCY INFORMATION: (716) 722-5151

FOR OTHER PURPOSES, CALL THE MARKETING AND DISTRIBUTION CENTER IN YOUR AREA.

COMPONENT INFORMATION

	WEIGHT PERCENT	CAS NUMBER	ACCESSION NUMBER
WATER	30-35	7732-18-5	035290
DIETHANOLAMINE-SULFUR DIOXIDE COMPLEX	50-55	63149-47-3	931981
*2-AMINOETHANOL	5-10	141-43-5	901597
DIETHYLENE GLYCOL	5-10	111-46-6	902041
*HYDROQUINONE**	9	123-31-9	900356

*PRINCIPAL HAZARDOUS COMPONENT(S)

**CHEMICAL SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS & REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372.

PHYSICAL DATA

APPEARANCE AND ODOR: BROWN SOLUTION, AMINE ODOR

BOILING POINT: GT 100 C (GT 212 F)

VAPOR PRESSURE: CA. 11 MMHG @ 20 C

EVAPORATION RATE (N-BUTYL ACETATE = 1): NOT AVAILABLE

VAPOR DENSITY (AIR = 1): CA. 2.1

VOLATILE FRACTION BY WEIGHT: CA. 70 %

SPECIFIC GRAVITY (H2O = 1): 1.249

PH: APPROX 9.0

SOLUBILITY IN WATER (BY WEIGHT): COMPLETE

GT = GREATER THAN; LT = LESS THAN

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2

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FIRE AND EXPLOSION HAZARD

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FLASH POINT: NONE

EXTINGUISHING MEDIA: WATER SPRAY, DRY CHEMICAL, CARBON DIOXIDE, "ALCOHOL"
FOAMSPECIAL FIRE FIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS
AND PROTECTIVE CLOTHING.UNUSUAL FIRE AND EXPLOSION HAZARDS: FIRE OR EXCESSIVE HEAT MAY CAUSE
PRODUCTION OF HAZARDOUS DECOMPOSITION PRODUCTS.

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REACTIVITY DATA

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STABILITY: STABLE

INCOMPATIBILITY: STRONG OXIDIZERS

HAZARDOUS DECOMPOSITION PRODUCTS: COMBUSTION WILL PRODUCE CARBON DIOXIDE AND
PROBABLY CARBON MONOXIDE. AMMONIA AND OXIDES OF SULFUR AND NITROGEN MAY ALSO
BE PRESENT.

CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

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TOXICOLOGICAL PROPERTIES

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EXPOSURE LIMITS:

COMPONENT: HYDROQUINONE

ACGIH TLV: 2MG/M3 - TWA (ACGIH 1989 - 1990)

OSHA PEL: 2MG/M3 - TWA

COMPONENT: 2-AMINOETHANOL

ACGIH TLV: 3 PPM - TWA; 6 PPM - STEL (ACGIH 1989 - 1990)

OSHA PEL: 3 PPM - TWA; 6 PPM - STEL

EXPOSURE EFFECTS:

INHALATION: VAPOR MAY CAUSE UPPER RESPIRATORY TRACT IRRITATION

EYES: MAY CAUSE IRRITATION. VAPOR MAY CAUSE EYE IRRITATION.

SKIN: PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE SKIN IRRITATION.
REPEATED SKIN CONTACT MAY RESULT IN AN ALLERGIC SKIN REACTION.

INGESTION: HARMFUL IF SWALLOWED.

TOXICITY DATA:

TEST	SPECIES	RESULT (2)	CLASSIFICATION (1)
ORAL LD50	RAT	GT 3200 MG/KG	SLIGHTLY TOXIC
SKIN IRRITATION	GUINEA PIG	STRONG IRRITATION	
EYE IRRITATION	RABBIT	MODERATE IRRITATION	
SKIN ABSORPTION	GUINEA PIG	NO EVIDENCE AT 20 ML/KG	

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84-0346

MSDS 031739 REV 04/12/1990

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3

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PROTECTION AND PREVENTIVE MEASURES

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VENTILATION: GOOD GENERAL VENTILATION SHOULD BE SUFFICIENT.

SKIN AND EYE PROTECTION: PROTECTIVE GLOVES SHOULD BE WORN. SAFETY GLASSES WITH SIDE SHIELDS SHOULD BE WORN. THE ROUTINE USE OF A NON-ALKALINE (ACID) TYPE OF HAND CLEANER WILL HELP MINIMIZE THE POSSIBILITY OF ALLERGIC SKIN REACTION.

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STORAGE AND DISPOSAL

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SPECIAL STORAGE AND HANDLING PRECAUTIONS: KEEP FROM CONTACT WITH OXIDIZING MATERIALS.

SPILL, LEAK, AND DISPOSAL PROCEDURES: FLUSH MATERIAL TO ACID-FREE SEWER WITH LARGE AMOUNTS OF WATER. DISCHARGE, TREATMENT, OR DISPOSAL MAY BE SUBJECT TO FEDERAL, STATE, OR LOCAL LAWS.

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FIRST AID

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INHALATION: REMOVE TO FRESH AIR.

EYES: IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES AND GET MEDICAL ATTENTION.

SKIN: FLUSH SKIN WITH PLENTY OF SOAP AND WATER.

INGESTION: IF SWALLOWED, INDUCE VOMITING IMMEDIATELY AS DIRECTED BY MEDICAL PERSONNEL. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. CALL A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY.

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ENVIRONMENTAL EFFECTS DATA

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THIS ENVIRONMENTAL EFFECTS SUMMARY IS WRITTEN TO ASSIST IN ADDRESSING EMERGENCIES CREATED BY AN ACCIDENTAL SPILL, WHICH MIGHT OCCUR DURING THE SHIPMENT OF THIS PRODUCT, AND IN GENERAL, IT IS NOT MEANT TO ADDRESS DISCHARGES TO SANITARY SEWERS OR PUBLICALLY OWNED TREATMENT WORKS.

SOME LABORATORY TEST DATA AND PUBLISHED DATA ARE AVAILABLE FOR THE MAJOR COMPONENTS OF THIS FORMULATION. ALTHOUGH THIS PRODUCT, AS SUCH, HAS NOT BEEN TESTED FOR ENVIRONMENTAL EFFECTS, THE DATA, MENTIONED ABOVE, HAVE BEEN USED TO PROVIDE THE FOLLOWING ESTIMATES OF POTENTIAL ENVIRONMENTAL IMPACT, IN THE EVENT OF AN ACCIDENTAL SPILL: (2-15)

C-0070.100J
84-0346

MSDS 031739 REV 04/12/1990

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4

THIS CHEMICAL FORMULATION IS A MODERATELY ALKALINE AQUEOUS SOLUTION, AND THIS PROPERTY MAY CAUSE ADVERSE ENVIRONMENTAL EFFECTS IF DISCHARGED DIRECTLY TO THE ENVIRONMENT WITHOUT TREATMENT. IT IS EXPECTED TO HAVE A LOW BIOLOGICAL OXYGEN DEMAND, AND IT IS EXPECTED TO CAUSE LITTLE OXYGEN DEPLETION IN AQUATIC SYSTEMS. IT IS EXPECTED TO HAVE A HIGH POTENTIAL TO AFFECT AQUATIC ORGANISMS AND SECONDARY WASTE TREATMENT MICROORGANISMS AND A MODERATE POTENTIAL TO AFFECT THE GERMINATION AND GROWTH OF SOME PLANTS. THE ORGANIC COMPONENTS OF THIS CHEMICAL FORMULATION ARE READILY BIODEGRADABLE AND ARE NOT EXPECTED TO PERSIST IN AN AQUATIC ENVIRONMENT. THEY ARE NOT LIKELY TO BIOCONCENTRATE. THE DIRECT INSTANTANEOUS DISCHARGE TO A RECEIVING BODY OF WATER OF AN AMOUNT OF THIS CHEMICAL FORMULATION WHICH WILL RAPIDLY PRODUCE, BY DILUTION, A FINAL CONCENTRATION OF 0.05 MG/L OR LESS IS NOT EXPECTED TO CAUSE AN ADVERSE ENVIRONMENTAL EFFECT. AFTER DILUTION WITH A LARGE AMOUNT OF WATER, FOLLOWED BY SECONDARY WASTE TREATMENT, THE CHEMICALS IN THIS FORMULATION ARE NOT EXPECTED TO HAVE ANY ADVERSE ENVIRONMENTAL IMPACT.

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TRANSPORTATION

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FOR TRANSPORTATION INFORMATION REGARDING THIS PRODUCT, PLEASE PHONE THE EASTMAN KODAK DISTRIBUTION CENTER NEAREST YOU: ROCHESTER, NY (716) 588-9293; OAK BROOK, IL (312) 954-6000; CHAMBLEE, GA (404) 455-0123; DALLAS, TX (214) 241-1611; WHITTIER, CA (213) 693-5222; HONOLULU, HI (808) 833-1661.

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REFERENCES

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1. HODGE, H.C. AND STERNER, J.H., AMERICAN INDUSTRIAL HYGIENE ASSOCIATION QUARTERLY, 10, 93(1949).
 2. UNPUBLISHED DATA, HEALTH AND ENVIRONMENT LABORATORIES, EASTMAN KODAK COMPANY, ROCHESTER, NEW YORK.
 3. VERSCHUREN, K., HANDBOOK OF ENVIRONMENTAL DATA ON ORGANIC CHEMICALS, SECOND EDITION, VAN NOSTRAND REINHOLD COMPANY, NEW YORK, N.Y., 1983.
 4. BATTELLE'S COLUMBUS LABORATORIES, WATER QUALITY CRITERIA DATA BOOK - VOL. 3 - EFFECTS OF CHEMICALS ON AQUATIC LIFE - SELECTED DATA FROM THE LITERATURE THROUGH 1968, FOR THE U.S. ENVIRONMENTAL PROTECTION AGENCY, PROJECT NO. 18050 GWV, CONTRACT NO. 68-01-0007, MAY 1971.
 5. NATIONAL ASSOCIATION OF PHOTOGRAPHIC MANUFACTURERS, INC. AND HYDROSCIENCE, INC., ENVIRONMENTAL EFFECTS OF PHOTOPROCESSING CHEMICALS, NATIONAL ASSOCIATION OF PHOTOGRAPHIC MANUFACTURERS, HARRISON, NY, 1974, 2 VOLS.
 6. KODAK PUBLICATION J-41, BODS AND COD OF PHOTOGRAPHIC CHEMICALS, EASTMAN KODAK CO., 1981.
 7. MCKEE, J.E. AND WOLF, H.W., EDS., WATER QUALITY CRITERIA, STATE OF CALIFORNIA, PUBLICATION NO. 3-A, 1963.
 8. BRINGMANN, G. AND KUEHN, R., Z. WASSER ABWASSER FORSCH., 10(5), 161-6 (1977) (IN GERMAN).
 9. BRINGMANN, G. AND KUEHN, R., Z. WASSER ABWASSER FORSCH., 15(1), 1-6 (1982) (IN GERMAN).
 10. JUHNKE, I. AND LUEDEMANN, D., Z. WASSER ABWASSER FORSCH., 11(5), 161-4 (1978) (IN GERMAN).
 11. LEBLANC, G.A., BULL. ENVIRON. CONTAM. TOXICOL., 24(5), 684-91 (1980).
 12. WELLES, H., Z. WASSER ABWASSER FORSCH., 15(2) 49-52 (1982) (IN GERMAN).

C-0070.100J
84-0346

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5

13. HEITMULLER, P.T., ET AL., BULL. ENVIRON. CONTAM. TOXICOL., 27(5), 596-604 (1981).
14. DEGRAEVE, G.M., ET AL., ARCH. ENVIRON. CONTAM. TOXICOL., 9, 557-68 (1980).
15. POMONA COLLEGE, MEDICINAL CHEMISTRY PROJECT, CHEMICAL PARAMETER DATA BASE," LED, A.J. AND HANSCH, C., EDS., SEAVER CHEMISTRY LABORATORY, CLAREMONT, CALIFORNIA, JUNE 22, 1983.

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PREPARATION INFORMATION

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HEALTH AND ENVIRONMENT LABORATORIES
EASTMAN KODAK COMPANY
ROCHESTER, NEW YORK 14652-3615

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